

Notice of Allowability

Application No.

09/927,131

Examiner

Chih-Ching Chow

Applicant(s)

RAJARAM ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/14/06.
2. ☒ The allowed claim(s) is/are 1-3, 10-23 and 26-38.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 20060913.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 12/13/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 09/13/06
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Examiner's Amendment and Statement of Reasons for Allowance

1. This action is responsive to Applicant's amendment filed July 14, 2006.

Examiner's Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Russ Marsden, Registration Number 43775, on September 13, 2006 for obviating any potential 101 issues and put the claims in condition for allowance.

3. The application has been amended as follows:

Amendments to the Specification

Please replace paragraph 0077 of the specification with the following amended paragraph. Deletions are indicated with a strikethrough (~~strikethrough~~), and additions are indicated with underlining (underlining).

FIG. 8 is a depiction of instructions being accessed by the run time engine ~~370~~ 812. Shown is a first instruction 800, a second instruction 802, and a jth instruction 804, however, the dynamic instruction set is not limited to any particular number of

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instructions. The length of the operation code in each instruction is fixed. The run-time engine ~~370~~ 812 captures the length of the instruction, as a measure of bytes or bits, to determine if the instruction includes data items. The remaining length of the instruction, after the operation code is subtracted, includes the data items. The run-time engine extracts the data items from the instruction. As shown, the length 806 of the first instruction 800 is measured and data items 808 are extracted. Note that not all instructions necessarily include data items to be extracted. The run-time engine ~~370~~ 812 uses the extracted data 808 in performing the sequence of operations responsive to the operation code 810 in instruction 800.

Drawings

A proposed replacement for figure 8.

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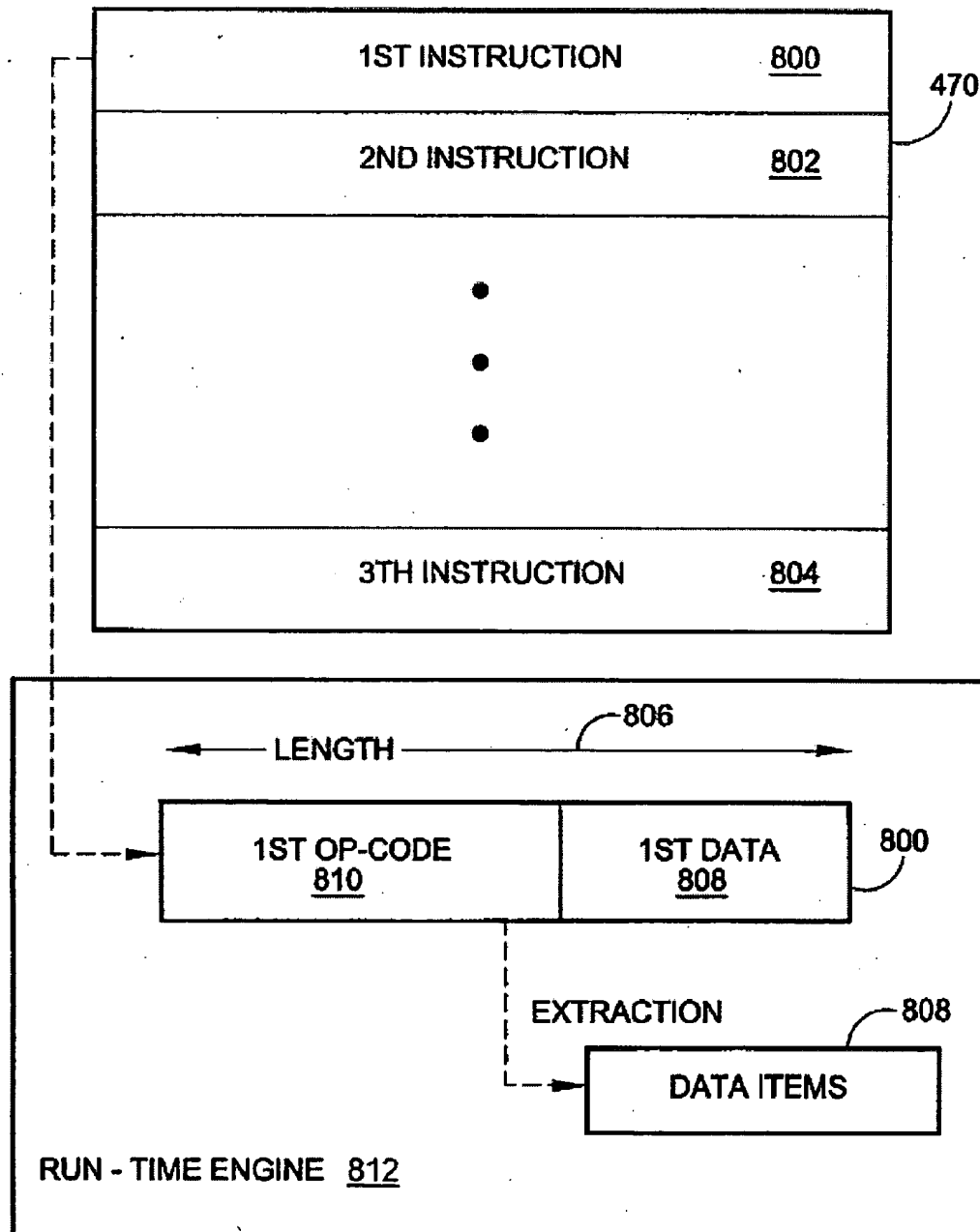


FIG. 8

Amendments To The Claims

1 (Currently Amended) In a wireless telephone, a method for executing dynamic instruction sets, the method comprising:

forming the system software into symbol libraries, each symbol library comprising symbols having related functionality;

arranging the symbol libraries into code sections;

executing system software on the wireless telephone, the system software for establishing an air interface connection with a wireless service provider;

receiving ~~user-unsolicited~~ dynamic instructions sets comprising patch manager run time instructions (PMRTIs) having operation codes and data items, using the air interface connection;

launching a run-time engine on the wireless telephone, including use of a run-time library from a first code section;

processing the received dynamic instruction sets using the run-time engine, including extracting data items responsive to the operation codes;

operating on system data and system software using ~~the dynamic instruction set~~ at least the operation codes and the data items in a manner responsive to the operation codes, using ~~and~~ the run-time engine; and,

~~in response to operating on~~ executing the system data and system software, ~~controlling the execution of the system software as operated on by the run-time engine.~~

2 (Original) The method of claim 1 further comprising:

following the processing of the dynamic instruction sets, deleting dynamic instruction sets.

3 (Original) The method of claim 1 wherein processing dynamic instruction sets includes processing instructions in response to mathematical and logical operations.

4-9 (canceled)

10 (Currently Amended) The method of claim ~~9~~ 1 wherein arranging the symbol libraries into code sections includes starting symbol libraries at the start of code sections and arranging symbols to be offset from their respective code section start addresses;

the method further comprising:

storing the start of code sections at corresponding start addresses;

maintaining a code section address table cross-referencing code section identifiers with corresponding start addresses; and,

maintaining a symbol offset address table cross-referencing symbol identifiers with corresponding offset addresses, and corresponding code section identifiers.

11 (Original) The method of claim 10 wherein receiving the patch manager run time instruction includes receiving symbol identifiers;

the method further comprising:

locating symbols corresponding to the received symbol identifiers by using the code section address table and symbol offset address table;

wherein performing a sequence of operations in response to the operation code includes:

when the located symbols are data items, extracting the data; and,

when the located symbols are instructions, executing the symbols.

12 (Currently Amended) The method of claim 8 1 wherein processing dynamic instruction sets includes:

accessing system data stored in a second code section in the file system section;

analyzing the system data;

creating updated system data;

wherein operating on system data and system software includes replacing the system data in the second section with the updated system data; and,

wherein ~~controlling the execution of~~ executing the system software includes using the updated system data in the execution of the system software.

13 (Currently Amended) The method of claim 8 1 further comprising:

storing a plurality of code sections in a code storage section nonvolatile memory;
wherein processing dynamic instruction sets includes:
accessing system data stored in a third code section in the code storage section;
analyzing the system data;
creating updated system data;
wherein operating on the system data and system software includes replacing the
system data in the third code section with the updated system data; and,
wherein ~~controlling the execution of~~ executing the system software includes using
the updated system data in the execution of the system software.

14 (Currently Amended) The method of claim 8 1 further comprising:

storing a plurality of code sections in a code storage section nonvolatile memory;
loading read-write data into volatile memory;
wherein processing dynamic instruction sets includes:
accessing the read-write data in volatile memory;
analyzing the read-write data;
creating updated read-write data;
wherein operating on the system data and system software includes replacing the
read-write data in volatile memory with the updated read-write data; and,

wherein ~~controlling the execution of~~ executing the system software includes using the updated read-write data in the execution of the system software.

15 (Currently Amended) The method of claim 8 1 wherein processing dynamic instruction sets includes:

in response to the operation code, monitoring the execution of the system software;

collecting performance data;

storing the performance data; and,

wherein operating on the system data and system software includes using the performance data in the evaluation of system software.

16 (Original) The method of claim 15 further comprising:

transmitting the stored data via an airlink interface.

17 (Currently Amended) The method of claim 8 1 further comprising:

storing a plurality of code sections in a code storage section nonvolatile memory;

wherein receiving patch manager run time instructions includes receiving a new code section;

wherein operating on the system data and system software includes adding the new code section to the code storage section; and,

wherein ~~controlling the execution of~~ executing the system software includes using the new code section in the execution of the system software.

18 (Original) The method of claim 17 wherein receiving a new code section includes receiving an updated code section; and,

wherein operating on the system data and system software includes replacing a fourth code section in the code storage section with the updated code section.

19 (Currently Amended) In a wireless telephone, a method for executing dynamic instruction sets, the method comprising:

forming system software for the wireless telephone into symbol libraries, each symbol library comprising symbols having related functionality;

arranging the symbol libraries into code sections in a code storage section nonvolatile memory in the wireless telephone;

executing system software on the wireless telephone;

receiving a patch manager run time instruction (PMRTI), including

conditional operation code and data items, in a file system section nonvolatile memory in the wireless telephone;

calling a run-time library from a first code section of the code storage section arranged in the wireless telephone;

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processing the patch manager run time instruction operation code using a run-time engine on the wireless telephone;

operating on system data and system software using the PMRTI and the run-time library; and,

in response to operating on the system data and system software, controlling the execution of the system software.

20 (Currently Amended) ~~In a~~ A wireless telephone, including a dynamic instruction set execution computer system, ~~the system~~ comprising:

an airlink interface for establishing an air interface communication with a wireless service provider to receive ~~user-unsolicited~~ dynamic instruction sets;

executable system software and wireless telephone system data differentiated into symbol libraries, each symbol library comprising symbols having related functionality, arranged into code sections and including a run-time library arranged in a first code section, in a storage area of the wireless telephone;

the received dynamic instruction sets for operating on the wireless telephone system data and the system software, the dynamic instructions including operation codes and data items, and wherein the dynamic instruction sets are organized in a patch manager run time instruction (PMRTI) ~~and controlling the execution of the system software for the wireless telephone;~~ and,

a run-time engine operating on the wireless telephone for processing the received dynamic instruction sets, thereby affecting the execution of the system software thereafter.

21 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 20 wherein the run-time engine processes the received dynamic instruction sets to perform mathematical and logical operations.

22 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 21 further comprising:

a file system section nonvolatile memory for receiving the dynamic instruction sets.

23 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 22 further comprising:

an interface through which the dynamic instruction sets are received into the file system section, wherein the interface is selected from the group including airlink, radio frequency (RF) hardline, installable memory module, infrared, and logic port interfaces.

24 - 25 (Deleted)

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26 (Currently Amended) The ~~system of claim 25~~ wireless telephone apparatus of claim

21 further comprising:

a code storage section nonvolatile memory for storing code sections.

27 (Currently Amended) The ~~system of claim 26~~ wireless telephone apparatus of claim

21 wherein the run-time engine reads the dynamic instruction set operation code and performs a sequence of operations in response to the operation code.

28 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 27 wherein the run-time engine captures the length of a dynamic instruction set to determine if data items are included, extracts the data items from the dynamic instruction set, and uses the extracted data in performing the sequence of operations responsive to the operation code.

29 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 28 wherein the symbol libraries are arranged to start at the start of code sections and symbols are arranged to be offset from their respective code section start addresses;

wherein a code storage section includes start addresses corresponding to code section start addresses;

the computer system further comprising:

a code section address table cross-referencing code section identifiers with corresponding start addresses in the code storage section; and,

a symbol offset address table cross-referencing symbol identifiers with corresponding offset addresses, and corresponding code section identifiers.

30 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 27 wherein the dynamic instruction set includes symbol identifiers; and,

wherein the run-time engine locates symbols corresponding to the received symbol identifiers using the code section address table and symbol offset address table, extracts data when the located symbols are data items, and executes the symbols when the located symbols are instructions.

31 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 27 wherein the system data is stored in a second code section in the file system section;

wherein the run-time engine accesses system data, analyzes the system data, creates updated system data, and replaces the system data in the second code section with the updated system data in response to the operation code; and,

wherein the system software is controlled to execute using the updated system data.

32 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 27 wherein the system data is stored in a third code section in the code storage section;

wherein the run-time engine accesses system data, analyzes the system data, creates updated system data, and replaces the system data in the third code section with the updated system data in response to the operation code; and,

wherein the system software is controlled to execute using the updated system data.

33 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 27 further comprising:

a volatile memory to accept read-write data;

wherein the run-time engine accesses the read-write data, analyzes the read-write data, creates updated read-write data, and replaces the read-write data in the volatile memory with the updated read-write data in response to the operation code; and,

wherein the system software is controlled to execute using the updated read-write data in volatile memory.

34 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 27 wherein the run-time engine monitors the execution of the system software, collects performance data, and stores the performance data in the file system section in response to the operation code; and,

wherein the system software is controlled to execute by collecting the performance data for evaluation of the system software.

35 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 34 wherein the run-time engine accesses the performance data from the file system section and transmits the performance data via an airlink interface in response to the operation code.

36 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 27 wherein the file system section receives a patch manager run time instruction including a new code section;

wherein the run-time engine adds the new code section to the code storage section in response to the operation code; and,

wherein the system software is controlled to execute using the new code section.

37 (Currently Amended) The ~~system~~ wireless telephone apparatus of claim 36 wherein the file system section receives a patch manager run time instruction including an updated code section;

wherein the run-time engine replaces a fourth code section in the code storage section with the updated code section in response to the operation code; and,

wherein the system software is controlled to execute using the updated code section.

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38 (Currently Amended) ~~In a~~ A wireless telephone, including a dynamic instruction set execution computer system, ~~the system~~ comprising:

an airlink interface for establishing an air interface communication with a wireless service provider;

executable system software and wireless telephone system data in a storage area of the wireless telephone, ~~and~~ differentiated into code sections with symbol libraries arranged within;

patch manager run time instructions (~~PMRTIS~~) (PMRTIs) organized as dynamic instruction sets with operation code and data items for operating on the wireless telephone system data and the system software and a run-time engine which processes the PMRTIs and for controlling thereafter affecting the execution of the system software;

a file system section nonvolatile memory in a storage area of the wireless telephone for receiving the patch manager run time instructions; and,

a run-time library arranged in a first code section for processing the dynamic instruction sets.

-- END --

Examiner's Statement of Reason(s) for Allowance

4. Claims 1-3, 10-23, 26-38 are allowed.

5. The following is an examiner's statement of reasons for allowance:

The prior arts of record: Hoffman, teaches terminal devices for a wireless communication network are manufactured and distributed with predetermined communication capabilities and a minimal operation capability. McGuire, teaches a method and system for downloading software update data for installing a revised software product on a client computer minimizes the amount of update data to be transmitted over the network by downloading only those files needed to put the client computer in the state for installing the product. Hansson, teaches a method and apparatus for downloading software into a remotely located cellular telephone via wireless communication. Henerlau, teaches a method of dynamic system relocation. Kay, teaches a subscriber station for the wireless connection of user telecommunications equipment to a remote central station of a wireless telecommunications system includes a transmitter/receiver for wireless communication with the central station, at least one telephone line for connection to subscriber telecommunications equipment and a communications controller connected between the transmitter/receiver and the telephone line for processing signals for transmission and/or received signals. Kirbas, teaches systems and methods for modifying the area code in a wireless communication device are provided that provide authorization from the carrier. Lillich, teaches a variety of methods, apparatus and data structures for providing data driven patching. Beasley, teaches a system that includes a manager host, and a mobile unit. The manager host is operable to initiate transmission through a communication network of at least one discrete patch message defining at least one patch. Hayashida, teaches a compiler that has a character string analyzer which divides instructions coded within a source program into tokens, a syntax analyzer which analyzes the syntax of the tokens to determine whether this syntax is correct, a code generator

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which converts the source program to machine language, and an **intrinsic (build-in)** function information database into which is stored built-in function definition attributes; Do, teaches a dynamic instruction system for the input of parts in a vehicle production line. However, none of them, taken alone or in combination, teaches a **wireless telephone**, including a **dynamic instruction set execution computer system**, which comprising: an **airlink interface** for establishing an air interface communication with a wireless service provider; executable system software and wireless telephone system data in a storage area of the wireless telephone differentiated into **code sections** with **symbol libraries** arranged within; **patch manager run time instructions (PMRTIs)** organized as dynamic instruction sets with operation code and data items for operating on the wireless telephone system data and the system software and a **run-time engine** which processes the PMRTIs; a file system section nonvolatile memory in a storage area of the wireless telephone for receiving the patch manager run time instructions; and, a **run-time library** arranged in a first code section for **processing the dynamic instruction sets**, in such a manner as recited in claims 1, 19, 20, and 38.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 7:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chih-Ching Chow

Examiner

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September 14, 2006

CC


WEI ZHEN
SUPERVISORY PATENT EXAMINER

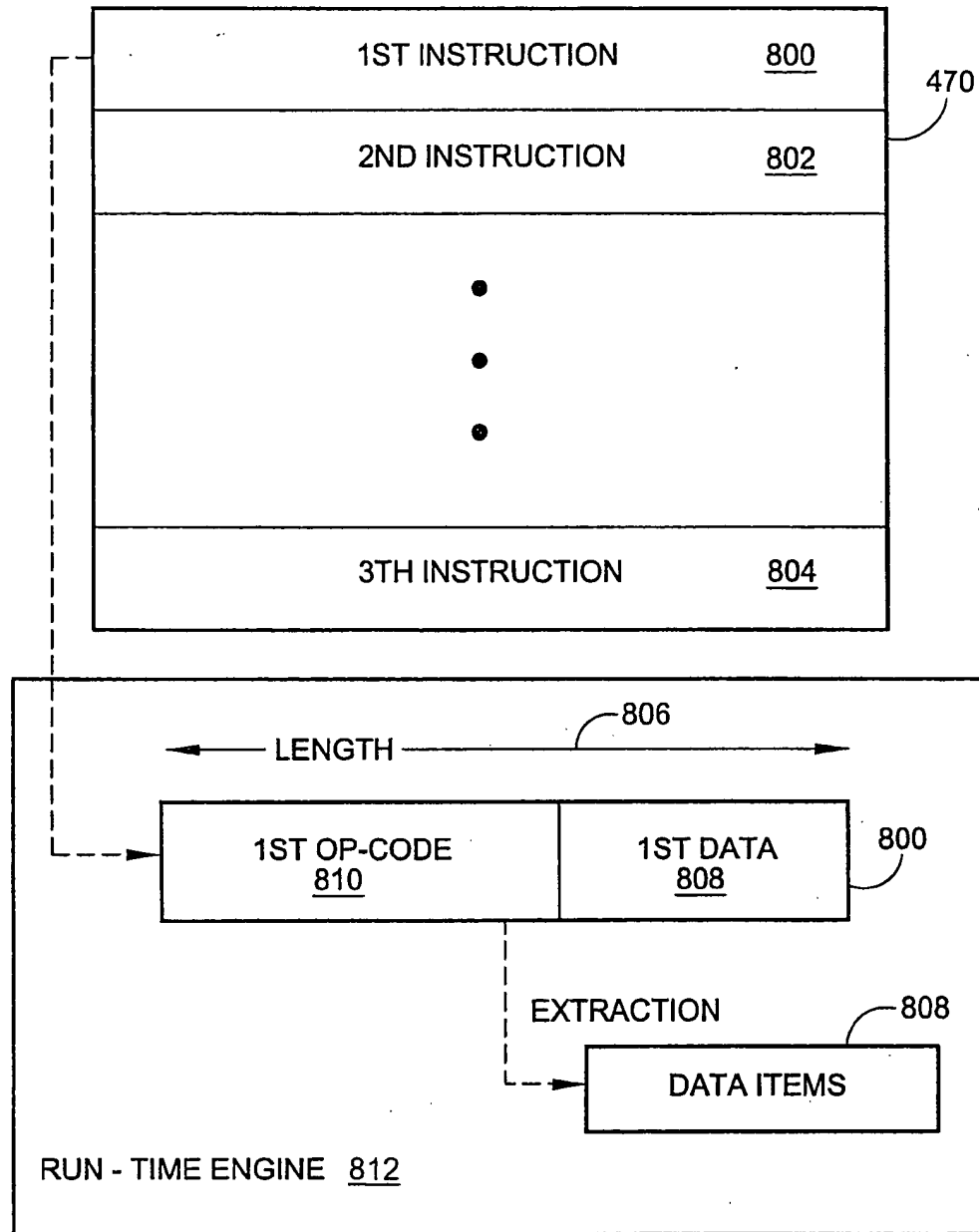


FIG. 8